



# Micropayments Overview

[Micropayments](#) - [Overview](#) - [Recommended Reading](#)

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## The W3C Ecommerce/Micropayment Activity is now closed.

An major factor in the evolution of the Web is Electronic Commerce: the ability to buy, sell, and advertise goods and services to customers and consumers. One concern in the development of Electronic Commerce on the Web is the trust that can be placed in the provenance, reliability, security and privacy of information available from or transferred over the internet. Another concern is the need for low friction commerce transactions allowing quality and ease of use for consumers, a key factor the future of Electronic Commerce. The potential for global electronic commerce is immense; much of this potential is and will be realized by the continued development of Web technologies. The World Wide Web Consortium, leading the web to its full potential, is therefore concerned with the evolution of Electronic Commerce on the Web. The role of W3C is to focus on core infrastructure technologies for Electronic Commerce and identify common infrastructure needed in this area. W3C is not committed for example in specifying banking systems nor schemas for specific Electronic Commerce applications.

W3C has closed its Ecommerce and Micropayment Activity, but through the following activities W3C is committed to key factors for success in the evolution of Electronic Commerce:

- The W3C [XML Signature](#) provides a mechanism for signing documents and metadata in order to establish who made the statement.
- The W3C [XML Encryption](#) specifies a process for encrypting/decrypting digital content and an XML syntax used to represent the encrypted content and information that enables an intended recipient to decrypt it.
- The W3C [XML Protocol](#) goal is to develop technologies which allow two or more peers to communicate in a distributed environment, using XML as its encapsulation language, allowing automated negotiations. The search is on for common ground that can meet the heavyweight, commercial demands of business to business e-commerce systems, and at the same time satisfy aesthetic requirements for a lightweight, simple network protocol for distributed applications.

- The Semantic Web is a vision: the idea of having data on the web defined and linked in a way that it can be used by machines not just for display purposes, but for automation, integration and reuse of data across various applications. Metadata provides a means to make statements and create machine-readable statements.
  - The Platform for Privacy Preferences Project (P3P) provides communication about data privacy practices between consumers and merchant sites on the Web as well as enhanced user control over the use and disclosure of personal information.
  - The Micropayment initiative specifies how to provide in a Web page all the information necessary to initialize a micropayment and transfer this information to the wallet for processing.
  - Major W3C common specifications for the Web in areas such as network protocols, graphical user interface, remain the basis of Electronic Commerce.
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## News

- **New! Cartio Micropayments, an implementation of the Common Markup for Micropayment per-fee-links specification.**
  - NewGenPay MicroPayments, an implementation of the Common Markup for Micropayment per-fee-links specification.
  - Common Markup for Micropayment per-fee-links" Final Public Working Draft released for public and for implementation experience.
    - The W3C Membership and other interested parties are invited to review this 1999 August 25th Final Public Working Draft and report implementation experience. Please send comments to the publicly archived list [www-micropay-comments@w3.org](mailto:www-micropay-comments@w3.org) ([archive](#)).
    - The Micropayments Markup Working Group specification work will be held at this stage to await significant implementation experience and collect comments on the public mailing list.
    - The amount of implementation received by 2000 March 31th on the mailing list will determine if this draft will be submitted for Proposed Recommendation.
- While we welcome implementation experience reports, the Micropayment Markup Working Group will not allow early implementation to constrain its ability to make changes to this specification prior to final release.
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- Micropayments Markup Working Group Page and Micropayments API Working Group Page (W3C Members only)
- Briefing Package "Micropayments Initiation" / Briefing Package accepted (W3C Members only)
- Meeting announcement on Micropayment in Paris / Meeting Minutes (W3C Members only)

## About the micropayments

At the September Electronic Commerce Interest Group Meeting in Brussels, W3C's members expressed their interest in W3C working in the area of Micropayments.

The Working Groups will propose two specifications, as defined in the Briefing Package "Micropayments Initiation" :

- Micropayments Markup Working Group : The embedding of payment information in Web pages.

This specification shall provide an extensible way to embed in a Web page all the information necessary to initialise a micropayment.

Likely candidates of the data elements provided are amounts and currencies, payment systems and/or brand and possibly other kinds of information like conditions of the transfer and others. This embedding should be considered in a way to facilitate an intuitive user interface and limited error handling (e.g. in case the original request was not accompanied with a payment). The latter may include practices for embedding payment requests in HTTP error codes.

- Micropayments API Working Group Page : The API to start the wallet and transfer the information defined above to the wallet for processing.

The API should be able to register and handle multiple wallets. A possible result of this Working Group could be sample code for a "wallet handler".

## What is a "Micropayment"?

One important aspect of "micropayments" is that the definition varies with the audience. This page lists a variety of systems claiming to be "Micropayments". All of them are capable of handling arbitrarily small amounts of money. This was never a real problem; the problem is keeping the cost for the individual transaction low. A very practical approach can be derived from the MPTP Working Draft (Micro Payment Transport Protocol, at the IETF). Micropayments have to be suitable for the sale of non-tangible goods over the Internet. This imposes requirements on speed and cost of processing of the payments: delivery occurs nearly instantaneously on the Internet, and often in arbitrarily small pieces. On the other hand, the bottleneck in sales of tangible goods, handling and shipping, sets a lower bound particularly for costs to remain economical.

## Why do we need it?

With the rising importance of intangible (e.g. information) goods in global

economies and their instantaneous delivery at negligible cost, "conventional" payment methods tend to be more expensive than the actual product. On the other hand, billing for small portions of a product or service reduces the need of security\*.

*\* security is defined here to be the ratio of security cost to protected value*

## Related Reading :

### Micropayments Technology Providers

- [Cartio Micropayments](#)
- [Clickshare](#)
- [CyberCash: CyberCoin](#)
- [DigiCash](#)
- [E-Money](#)
- [Enition](#)
- [GC-Tech](#)
- [Internet Dollar](#)
- [Jalda](#)
- [Micropayments Transfer Protocol MPTP](#)
- [Millicent by Compaq](#)
- [NetBill](#) Carnegie Mellon University:
- [NetCheque](#) University of Southern California
- [NTSys](#)
- [NewGenPay MicroPayments](#)
- [OpenMarket](#)
- [Pay2See](#)
- [PayWord and MicroMint](#) by Rivest and Shamir
- [SOX](#) from Systemics
- [Trivnet](#)
- [The Ultimus Solution](#)
- [Wave Systems Corp](#)

Please note that online services should be listed here as well: Most of them have at least experience with time-based billing, so "online time" acts as some "intermediate currency".

### Other payment related links

- [ePSO Inventory DataBase](#): a database containing descriptions of over a hundred electronic payment systems with a focus on B2C and European Systems.
- [Overviews on secure payments and e-commerce in general](#)
- [Hal Varian's Digital Commerce Links](#)
- [Index on electronic payment written in FRENCH, by Alain Plamondon](#)
- [IESERV](#)
- [Michael Peirce](#)
- [Open Market](#)

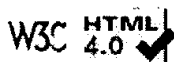
- [Phil Hallam-Baker's roadmap to payment schemes](#)
- [Roy Davies' E-moneylinks](#)
- [SEMPER -- Secure Electronic Marketplace for Europe](#)
- [Yahoo](#)

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### Related W3C links

[Electronic Commerce Interest Group](#) - [Public Policy Interest Group](#) - [Security Interest Group](#)

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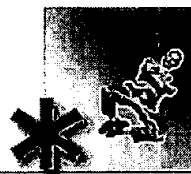
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*Thierry MICHEL, W3C Electronic Commerce Activity Leader*  
*Last updated: \$Date: 2001/08/31 06:13:14 \$*

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### Looking for information about CyberCash® Internet payment services?

CyberCash's Internet payments business was recently acquired by VeriSign, the leading provider of digital trust services. VeriSign's global reach, unmatched experience, and market-leading Internet infrastructure now gives you access to a comprehensive set of products and services that enable you to offer customers a safe and efficient e-commerce experience. Learn more at the [VeriSign Payment Web site](#).

If you are a current CyberCash CashRegister customer and have a question about your current service, please visit [CyberCash CashRegister Support](#) on VeriSign's Web site.

To speak to a payment sales professional, call 1-888-847-2747 (1-650-426-3898) or send an e-mail message to [paymentsales@verisign.com](mailto:paymentsales@verisign.com).

### Looking for information about ICVERIFY®, WebAuthorize®, PCAuthorize®?

Sales and support information for ICVERIFY and Tellan® payment software products have been moved to a new Web site!



For future reference, please access [www.icverify.com](http://www.icverify.com) or [www.tellan.com](http://www.tellan.com) to link to our newly launched Web site. Once you're there, you can choose from an array of product services that will help you accept point of sale or e-commerce transactions for physical stores or on-line businesses.

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